

AMENDMENTS TO THE CLAIMS

1-23. (Cancelled)

24. (Currently amended) An integrated information communication system (ICS), comprising, wherein:

wherein an ICS network address for discriminating an ICS logic terminal is assigned to an ICS logic terminal of a terminal in a user communication line; when a set of an ICS logic terminal discrimination information, a sender ICS user address and a receiver ICS user address is decided, an ICS network communication line to transfer an ICS network frame between an access control apparatus at a sending side and an access control apparatus at a receiving side is uniquely decided;

an ICS network address to decide a destination of the ICS network frame to specify ~~said the~~ ICS network communication line is defined by said access control apparatus and a relay table of a relay device ~~at the sending side~~,

an external ICS user frame having a unique ICS user address system ADX is inputted to said access control apparatus at ~~a~~ the sending side from ~~said the~~ user communication line via ~~said the~~ ICS logic terminal;

when an ICS logic terminal discrimination information is inputted which ~~said by~~ the ICS user frame inputted, ~~said the~~ sender ICS user address and ~~said the~~ receiver ICS user address in ~~said the~~ ICS user frame are found to be registered at record of ~~the~~ in a conversion table in said access control apparatus ~~at the sending side~~;

~~said the~~ ICS user frame is converted to an internal ICS network frame having an ICS network address system ADS;

~~said the~~ ICS network frame includes a network control field and ~~said network control field stores~~ which is operable to store at least ~~said the~~ ICS network address to specify ~~said the~~ ICS network communication line;

a destination of ~~said the~~ ICS network frame is judged, under a rule of ~~said the~~ ICS network address system ADS, by said access control apparatus and ~~by said relay table in~~ ~~said relay device of the sending side~~, and then ~~said the~~ ICS network frame is ~~then~~ transferred in ~~said the~~ ICS network communication line; and

when said the ICS network frame is reached at said access control apparatus at a the receiving side, said the ICS user frame is restored from said the ICS network frame, is transferred in another user communication line via an ICS logic terminal of said access control apparatus at a the receiving side, and is reached at an external information communication equipment.

25. (Currently amended) An integrated information communication system according to claim 24, wherein said the conversion table includes a priority degree, said the ICS network frame includes a priority degree get obtained from said the conversion table, and said the ICS network frame is sent by said relay device under said the priority degree of said the ICS network frame.

26. (Currently amended) An integrated information communication system according to claim 24, wherein said the conversion table has includes two or more records, a set of said the ICS network address for specifying said the receiver ICS user address and said the ICS network communication line are respectively different for each record to a same set of said the ICS logic terminal discrimination information and sender ICS user address, and a destination of said the ICS user frame is changeable by changing the receiver ICS user address.

27. (Currently amended) An integrated information communication system according to claim 24, wherein a an intra-corporation communication and an inter-corporation communication are enabled in correspondence that said the sender ICS user address and receiver ICS user address registered in said the conversion table are an intra-corporation communication address or an inter-corporation communication address.

28-121. (Cancelled)

122. (Currently amended) An integrated information communication system (ICS) comprising at least one access control apparatus each including a conversion table, wherein:

wherein said access control apparatus is operable to convert an external ICS user frame having a unique ICS user address system ADX is converted into an inner ICS network frame having an ICS network address system ADS based on an administration of a conversion table in an said access control apparatus;

the ICS network frame comprises a network control field and a network data field;

the network control field ~~stores~~ is operable to store addresses according to the ICS network address system ADS, and the network data field includes the ICS user frame;

said access control apparatus is operable to send the ICS network frame is sent inside said integrated information communication system according to a rule of the ICS network address system ADS;

said access control apparatus is operable to restore the ICS user frame is restored from the ICS network frame and is transferred transfer the restored ICS user frame to another external information communication equipment;

an internal address system is defined regardless of an external address system;

the ICS network address is assigned to an ICS logic terminal;

a receiving ICS network address is registered as a record in the conversion table so as to settle automatically when a group of an ICS logic terminal discriminating information, a sender ICS user address and a receiver ICS user address is determined; and

said access control apparatus is operable to convert the ICS user frame is converted into the ICS network frame when it is found out upon determining that all of the ICS logic terminals inputted from the ICS user frame, the sender ICS user address in the ICS user frame and the receiver ICS user address are registered at the record in the conversion table.

123. (Currently amended) An integrated information communication system according to Claim 122, wherein the ICS user frame ~~stores~~ is operable to store a digitalized telephone voice.

124. (Currently amended) An integrated information communication system according to Claim 122, wherein an IP telephone is connected with the said integrated information communication system, and a digitalized telephone voice is transferred therein.

125. (Currently amended) An integrated information communication system (ICS) comprising:

a transmitting access control apparatus;

a receiving access control apparatus; and

an ICS network communication line operable to provide communication between said transmitting access control apparatus and said receiving access control apparatus, wherein:

wherein a sender ICS user frame inputs-is inputted from an ICS logic terminal at a terminating point of a user communication line, and an-said ICS network communication line, which is an ICS network frame transferred between a-said transmitting access control apparatus and a-said receiving access control apparatus is settled when a group of an-ICS logic terminal discriminating information of a sending side and a receiver ICS user address in a sending ICS user frame is determined.

126. (Currently amended) An integrated information communication system according to Claim 125, wherein the ICS user frame stores-is operable to store a digitalized telephone voice.

127. (Currently amended) An integrated information communication system (ICS) comprising:

a transmitting access control apparatus;

a receiving access control apparatus; and

an ICS network communication line operable to provide communication between said transmitting access control apparatus and said receiving access control apparatus, wherein:

wherein a sender ICS user frame inputs-is inputted from an ICS logic terminal at a terminating point of a user communication line, and an-said ICS network communication

line, which is an ICS network frame transferred between a-said transmitting access control apparatus and a-said receiving access control apparatus, is settled when a group of an ICS logic terminal discriminating information of a sending side, a receiver ICS user address in a sending ICS user frame and a receiver ICS user address is determined.

128. (Currently amended) An IP telephone set including at least an IP address storing unit, an audio data inputting and outputting unit, and an audio data transmitting and receiving unit, wherein:

said IP address storing unit is operable to store an ICS user address of said IP telephone set;

an ICS user frame including a telephone number of a destination telephone set is produced and sent out to an ICS user communication line, and an ICS user address in the ICS user frame including an the ICS user address of the said IP telephone set included in the IP address storing unit and an ICS user address of an inquired server is sent to the ICS user communication line;

an ICS user frame storing the ICS address of the destination telephone set is received from the ICS communication line by said IP telephone set;

an audio data is inputted from the said audio inputting and outputting unit; said audio data transmitting and receiving unit is operable to convert the audio data is converted to a digital audio data at an audio data transmitting and receiving unit, stored in the ICS user frame, and transmitted transmit the digital audio data to the destination telephone set; and

said IP telephone set is thereafter operable to perform telephone communication is thereafter carried out with ICS user frames transmitted and received between said IP telephone set and the destination telephone set, the ICS user addresses in the ICS user frame including digital audio data including the ICS user address of the said IP telephone set and the obtained ICS user address of the destination telephone set.

129. (Currently amended) An IP terminal including a function of producing operable to produce, and transmitting transmit and receiving receive at least an ICS domain name and

an ICS user address of the said IP terminal, an ICS user address of a cataloged server and an ICS user frame, wherein:

the said IP terminal is connected to a position of a home IP terminal by a user of the said IP terminal for sending out to a user communication line an ICS user frame including at least the name of the ICS domain and the ICS user address of the said IP terminal produced in the said IP terminal; and

the address of the ICS user frame includes the ICS user address of the said IP terminal and the ICS user address of the cataloged server, so that the said IP terminal can is enabled to receive the ICS user frame including a report of cataloging from the user communication line.

130. (Currently amended) An integrated information communication system including two or more access ~~controllers~~control apparatuses, wherein:

an access control apparatus on an originating side convertsis operable to convert a transmission ICS user frame, which is inputted from an ICS logical terminal at an end of a user communication line, to an ICS network frame, which is transferred in the said integrated information communication system;

an access control apparatus on a receiving side receivesis operable to receive the transmitted ICS network frame arrived thereat and restoresrestore the ICS network frame as the ICS user frame; and

the ICS user frame includingincludes a digitalized audio signal.

131. (Currently amended) An integrated information communication system comprising an access control apparatus at a transmitting side and an access control apparatus at a receiving side, wherein:

said access control apparatus at the transmitting side is operable to determine an ICS network communication line in which an ICS network frame is transferred between said access control apparatus at the transmitting side and said access control apparatus at the receiving side when a transmission ICS user frame is inputted from an ICS logical terminal at a termination of a user communication line, and a set of ICS logical terminal identification information at a transmitting side and a receiver ICS user address in the

transmission ICS user frame is determined, ~~an ICS network communication line in which an ICS network frame is transferred is determined between an access control device at the transmitting side and an access control device at an incoming side.~~

132. (Currently amended) An integrated information communication system comprising an access control apparatus at a transmitting side, wherein:
~~said access control apparatus at the transmitting side is operable to determine an ICS network communication line in which an ICS network frame is transferred between said access control apparatus at the transmitting side and an access control apparatus at a receiving side~~ when a transmission ICS user frame is inputted from an ICS logical terminal at a termination of a user communication line, and a set of ICS logical terminal identification information, and a transmitter ICS user address and a receiver ICS user address in the transmission ICS user frame is determined, ~~an ICS network communication line in which an ICS network frame is transferred is determined between an access control device at a transmitting side and an access control device at an incoming side.~~

133-134. (Cancelled)

135. (Currently amended) An integrated information communication system comprising an access control apparatus at a transmitting side, wherein:
~~said access control apparatus at the transmitting side is operable to determine an ICS network communication line in which an ICS network frame is transferred between said access control apparatus at the transmitting side and an access control apparatus at a receiving side~~ when a transmission ICS user frame is inputted from an ICS logical terminal at a termination of a user communication line, and a set of ICS logical terminal identification information at a transmitting side and a receiver ICS user address in the transmission ICS user frame is determined, ~~an ICS network communication line in which an ICS network frame is transferred is determined between an access control device at the transmitting side and an access control device at an incoming side, and, based on the basis of an ICS domain name, a conversion table server prepares~~ is operable to prepare

new items of a conversion table including an ICS network address and an ICS user address obtained by forwarding an inquiry to a domain name server.

136. (Currently amended) An integrated information communication system comprising two or more access control ~~devices~~apparatuses which each include a conversion table, at least one of said access control apparatuses being an access control apparatus of a transmitting side, and at least one of said access control apparatuses being an access control apparatus of a receiving side, wherein:

~~the access control devices include a conversion table, said access control apparatus of the transmitting side is operable to receive an ICS user frame transmitted by a user is inputted to an access control device of a transmitting side via an ICS logical terminal at a termination of a user communication line, and becomes convert the received ICS user frame into an ICS network frame in the access control device of the transmitting side;~~

said access control apparatus of the transmitting side is operable to transfer the ICS network frame is transferred through the interior of the said integrated information communication system such that the ICS network frame and reaches an said access control device apparatus of the incoming receiving side;

said access control apparatus of the receiving side is operable to restore the ICS user frame is restored from the ICS network frame in the access control device of the incoming side, and enable the restored ICS user frame reaches to reach another user via a user communication line at a destination side; and

based on the basis of an ICS domain name, a conversion table server prepares is operable to prepare new items of the conversion table including an ICS network address and an ICS user address obtained by forwarding an inquiry to a domain name server, and a user is enabled to transmit and receive transmits and receives the ICS user frame between an external IP terminal of the said integrated information communication system and an IP terminal of another user, and at this time, IP frame communication is enabled to be carried out by using the new items of the conversion table.

137-139. (Cancelled)

140. (Currently amended) A charging method, wherein for an integrated information communication system includes including two or more access control devicesapparatuses, and, said method comprising:

inputting an external transmission ICS user frame is inputted to an access control device-apparatus at a transmitting side via an ICS logical terminal at a termination of a user communication line; and

forming an internal ICS network frame is formed in the access control device at the transmitting side;

forming an internal ICS network when an ICS user address of a user who transmitted the ICS user frame is registered in the access control deviceapparatus at the transmitting side, an internal ICS network frame is formed, and destroying the transmission ICS user frame when the ICS user address of the user who is a source of transmission is not registered in the access control deviceapparatus of the transmitting side; the transmission ICS user frame is destroyed; and

transferring the formed ICS network frame is transferred through an interior of the integrated information communication system and so that the formed ICS network frame reaches an access control device-apparatus at an incominga receiving side; and

restoring the transferred ICS user frame is restored from the ICS network frame in the access control device-apparatus at the incoming-receiving side; and

charging a communication fee is charged to the user who transmitted the ICS user frame by forming the ICS network frame or destroying the ICS user frame based on the basis of whether or not the transmission source address of the ICS user frame is registered in the access control device at the transmitting side.

141. (Currently amended) A charging method, wherein for an integrated information communication system includes including two or more access control devicesapparatuses, said method comprising; and

inputting an external transmission ICS user frame is inputted to an access control device-apparatus at a transmitting side via an ICS logical terminal at a termination of a

user communication line, the inputted ICS user frame and becomes becoming an internal ICS network frame in the access control device apparatus at the transmitting side; and

transferring the ICS network frame is transferred through an interior of the integrated information communication system and so that the ICS network frame reaches an access control device at an incominga receiving side; and

restoring the ICS user frame is restored from the ICS network frame in the access control device apparatus at the incoming receiving side; and

giving an ICS network address identifying the ICS logical terminal is given to the ICS logical terminal at the termination of the user communication line, and based on the basis of whether or not the ICS network address at the transmitting side is registered in a conversion table of the access control device apparatus at the transmitting side, converting a transmitted ICS user frame is converted to the internal ICS network frame; and

charging a communication fee is charged to the user communication line by selecting whether or not the ICS network frame is transferred through the interior of the integrated information communication system.

142. (Currently amended) An integrated information communication system operable to determine an ICS network address of an internal ICS network frame, wherein, based on the basis of an ICS user address given to an ICS logical terminal at a transmitting side and an external transmission ICS user frame, an ICS network address of an internal ICS network frame is determined, and enable telephone communication is made possible by transmitting and receiving an ICS user frame, in which a digitized voice is stored, between users outside an integrated information communication system, via the said integrated information communication system which, and based on the basis of the determined ICS network address, determines determine the ICS logical terminal at the incoming receiving side which should transmit a transmission ICS network frame.

143. (Currently amended) An integrated information communication system comprising two or more access control devicesapparatuses which each include a conversion table, at least one of said access control apparatuses being an access control

apparatus at a transmitting side, and at least one of said access control apparatuses being an access control apparatuses at a receiving side, wherein: the access control devices include a conversion table, and

said access control apparatus at the transmitting side is operable to receive an ICS user frame transmitted by a user is inputted to an access control device apparatus at a transmitting side via an ICS logical terminal at a termination of a user communication line, and convert the received ICS user frame to becomes an ICS network frame in the access control device apparatus at the transmitting side, and transfer the ICS network frame is transferred through the interior of the said integrated information communication system and so that the ICS network frame reaches an said access control system apparatus at an incoming the receiving side; and

said access control apparatus at the receiving side is operable to restore the ICS user frame is restored from the ICS network frame in the access control system apparatus at the incoming side, and such that the restored ICS user frame reaches another user via a user communication line at a destination side;

a conversion table server, based on the basis of a telephone number, a conversion table server prepares is operable to prepare new items of the conversion table including an ICS network address and an ICS user address obtained by forwarding an inquiry to a domain name server; and

an ICS user frame in which a digitized voice is stored is transmitted and received among two or more users, and telephone communication among the users is made possible by using the new items of the conversion table at an interior of an access control device apparatus in the said integrated information communication system.

144. (Currently amended) An integrated information communication system comprising an access control apparatus, wherein:

said access control apparatus is operable to receive a transmission ICS user frame is inputted from an ICS logical terminal of an said access control device apparatus at a termination of a user communication line, determine and an ICS network address of an internal ICS network frame is determined based on the basis of an ICS user address given to an ICS logical terminal at a transmitting side and an external transmission ICS user

frame, and determine an ICS logical terminal at an incominga receiving side to which the transmission ICS network frame is to be transmitted is determined based on the basis of the determined ICS network address; and

the said access control device apparatus comprised has encoding means and decoding means, and when a code class of the conversion table is specified to be "1" or "0" at the time of ICS encapsulation, said encoding means encodes the ICS user frame is encoded by the encoding means and so that the ICS user frame is converted to the ICS network frame and is transmitted through an interior of the said integrated information communication system; and

at the a time of ICS reverse-encapsulation, said access control apparatus is operable to investigate a code class of a control section of the ICS network frame is investigated, and said decoding means decodes the ICS network frame to return the ICS network frame is returned to an original ICS user frame by the decoding means in accordance with the designation of "1" or "0".

145. (Currently amended) An integrated information communication system comprising an access control apparatus and a receiver, wherein:

said access control apparatus is operable to receive a transmission ICS user frame is inputted from an ICS logical terminal of an-said access control device-apparatus at a termination of a user communication line, and determine an ICS network address of an internal ICS network frame is determined based on the basis of an ICS user address given to an ICS logical terminal at a transmitting side and an external transmission ICS user frame, and determine an ICS logical terminal at an incominga receiving side to which a transmission ICS network frame is to be transmitted is determined based on the basis of the determined ICS network address; and

said receiver of said an-integrated information communication system receiver embedsis operable to embed, in a roaming terminal, an ICS domain name and an ICS user address of a roaming terminal user, a special roaming special service number for the roaming terminal, an ICS user address of a connection server, and a code function and code related data, and when the roaming terminal is connected to another access control device-apparatus and starts inter-company communication, the ICS domain name, the

code roaming special service number, the ICS user address of the connection server, the code function, and the code related data are used.

146. (Currently amended) An integrated information communication system comprising an access control device at a transmitting side, an access control device at a receiving side, and a receiver, wherein:

said access control device at the transmitting side is operable to receive when a transmission ICS user frame is inputted from an ICS logical terminal at a termination of a user communication line, and determine a set of ICS logical terminal identification information of a transmitting side and a receiver ICS user address in a transmission ICS user frame is determined, and determine an ICS network communication line in which an ICS network frame is transferred is determined between an said access control device apparatus of at the transmitting side and an said access control device apparatus of an incoming at the receiving side; and

said receiver of said an-integrated information communication system receiver embeds is operable to embed, in a roaming terminal, an ICS domain name and an ICS user address of a roaming terminal user, a special roaming special service number for the roaming terminal, an ICS user address of a connection server, and a code function and code related data, and when the roaming terminal is connected to another access control device apparatus and starts an inter-company communication, the ICS domain name, the code roaming special service number, the ICS user address of the connection server, the code function, and the code related data are used.

147. (Currently amended) An integrated information communication system comprising an access control apparatus operable to:

receive, wherein a transmission ICS user frame is inputted from an ICS logical terminal of an said access control device apparatus at a termination of a user communication line; and

determine an ICS network address of an internal ICS network frame is determined based on the basis of an ICS user address given to the ICS logical terminal at a transmitting side and an external transmission ICS user frame; and

determine an ICS logical terminal at an incominga receiving side to which a transmission ICS network frame is to be transmitted ~~is determined based~~ on the basis of the determined ICS network address; and

wherein said the access control device apparatus includes at least one of a telephone line converting section ~~or and~~ a portable telephone line converting section having functions of converting operable to convert and reversely converting convert an interface of a telephone line or a portable telephone line to an ICS network frame transferable in an ICS network.

148. (Currently amended) An integrated information communication system comprising an access control apparatus at a transmitting side and an access control apparatus at a receiving side, wherein:

said access control apparatus at the transmitting side is operable to receive when a transmission ICS user frame is inputted from an ICS logical terminal at a termination of a user communication line, and determine a set of ICS logical terminal identification information at a transmitting side and a receiver ICS user address in a transmission ICS user frame is determined, and determine an ICS network communication line in which an ICS network frame is transferred is determined between an said access control device apparatus of at the transmitting side and an said access control device apparatus of an incoming the receiving side; and

each access control device apparatus includes at least one of a telephone line converting section ~~or and~~ a portable telephone line converting section having functions of converting operable to convert and reversely converting convert an interface of a telephone line or a portable telephone line to an ICS network frame transferable in an ICS network.

149. (Currently amended) An integrated information communication system comprising an access control apparatus operable to; wherein

receive a transmission ICS user frame is inputted from an ICS logical terminal of an said access control device apparatus at a termination of a user communication line, and

determine an ICS network address of an internal ICS network frame is determined based on the basis of an ICS user address given to the ICS logical terminal at a transmitting side and an external transmission ICS user frame; and

determine an ICS logical terminal at an ~~incoming~~ receiving side to which the transmission ICS network frame is to be transmitted is determined based on the basis of the determined ICS network address; and

~~the~~ wherein said access control device-apparatus includes a CATV line converting section having functions of converting operable to convert and reversely converting convert an interface of a CATV line to an ICS network frame transferable in an ICS network.

150. (Currently amended) An integrated information communication system comprising an access control apparatus at a transmitting side and an access control apparatus at a receiving side, wherein:

said access control apparatus at the transmitting side is operable to receive when a transmission ICS user frame is inputted from an ICS logical terminal at a termination of a user communication line, ~~and~~ determine a set of ICS logical terminal identification information at a transmitting side and a receiver ICS user address in a transmission ICS user frame is determined, ~~an~~ and determine an ICS network communication line in which an ICS network frame is transferred is determined between ~~an~~ said access control device apparatus at the transmitting side and ~~an~~ said access control device-apparatus at an ~~incoming~~ the receiving side; and

each access control device-apparatus includes a CATV line converting section having functions of converting operable to convert and reversely converting convert an interface of a CATV line to an ICS network frame transferable in an ICS network.

151-169. (Cancelled)

170. (Currently amended) An integrated information communication system according to claim 131-~~or~~ 133, wherein:

when the said access control device apparatus receives an ICS user frame, the said access control device apparatus is operable to read ~~reads~~ the type of a charging method of each ICS frame held in the conversion table based on the basis of an ICS user address included in the ICS user frame; and

when the read type of the charging method is a value expressing a measured rate charging method, the said access control device apparatus generates ~~is operable to~~ generate charging information and ~~transmits~~ transmit the charging information to a charging server as a charging information frame; and

when the read contents are a value expressing a flat rate charging method, the said access control device apparatus charges ~~is operable to charge~~ the user by generating the charging information and transmitting the charging information to the charging server as the charging information frame.

171. (Currently amended) An integrated information communication system comprising two or more access control ~~device~~ apparatuses, at least one of said access control apparatuses being an access control apparatus at a transmitting side, and at least one of said access control apparatuses being an access control apparatus at a receiving side, wherein:

said access control apparatus of the transmitting side is operable to receive a transmission ICS user frame is inputted from an ICS logical terminal at a termination of a user communication line, and convert the transmission ICS user frame to the transmission ICS user frame becomes an ICS network frame ~~in an access control device apparatus~~ of a transmitting side, and transfer the ICS network frame is transferred through an interior of the said integrated information communication system and so that the ICS network frame reaches ~~an~~ said access control device apparatus of an incoming at the receiving side; and

said access control apparatus at the receiving side is operable to restore the ICS network frame is restored as the ICS user frame ~~in the access control device~~ of the incoming side, and acquire an ICS user address of a communication destination and an ICS network address given to said access control apparatus at the receiving side based on a telephone number when telephone communication is carried out, ~~an ICS user address of a communication destination and an ICS network address given to the access control~~

device of the incoming side are acquired on the basis of a telephone number, and wherein the ICS user address and the ICS network address are held in a conversion table in an said access control device-apparatus at a calling the transmitting side.

172. (Currently amended) An integrated information communication system comprising two or more access control devicesapparatuses, at least one of said access control apparatuses being an access control apparatus at a transmitting side, and at least one of said access control apparatuses being an access control apparatus at a receiving side, wherein:

said access control apparatus at the transmitting side is operable to receive a transmission ICS user frame is inputted from an ICS logical terminal at a termination of a user communication line, and convert the transmission ICS user frame becomes to an ICS network frame in an access control device of a transmitting side, and transfer the ICS network frame is transferred through an interior of the said integrated information communication system and so that the ICS network frame reaches an said access control device-apparatus of an incoming at the receiving side; and

said access control apparatus at the receiving side is operable to restore the received ICS network frame is restored as the ICS user frame; in the access control device of the incoming side, and

when telephone communication is carried out, an ICS user address of a communication destination and an ICS network address given to the said access control device-apparatus at of the incoming receiving side are acquired based on the basis of a telephone number, and a voice is carried on a ICS user frame.

173. (Currently amended) An integrated information communication system comprising two or more access control devicesapparatuses, at least one of said access control apparatuses being an access control apparatus at a transmitting side, and at least one of said access control apparatuses being an access control apparatus at a receiving side, wherein:

said access control apparatus at the transmitting side is operable to receive a transmission ICS user frame is inputted from an ICS logical terminal at a termination of a

user communication line, and convert the transmission ICS user frame becomes to an ICS network frame in an access control device of a transmitting side, and transfer the ICS network frame is transferred through an interior of the said integrated information communication system and so that the ICS network frame reaches an said access control device apparatus of an incoming the receiving side; and

said access control apparatus at the receiving side is operable to restore the received ICS network frame is restored as the ICS user frame in the access control device of the incoming side; and

a telephone machine is connected via a telephone line from a telephone line control section at an interior of the said access control device apparatuses, and telephone communication is possible enabled.

174. (Currently amended) An integrated information communication system comprising two or more access control device apparatuses, at least one of said access control apparatuses being an access control apparatus at a transmitting side, and at least one of said access control apparatuses being an access control apparatus at a receiving side, wherein:

said access control apparatus at the transmitting side is operable to receive a transmission ICS user frame is inputted from an ICS logical terminal at a termination of a user communication line, and convert the transmission ICS user frame becomes to an ICS network frame in an access control device of a transmitting side, and transfer the ICS network frame is transferred through an interior of the said integrated information communication system and so that the ICS network frame reaches an said access control device apparatus of an incoming at the receiving side; and

in the said access control device apparatus of at the incoming receiving side, the ICS network frame connects is operable to connect, to an access control device apparatus, a first radio transceiver which has a function of converting internal information of an ICS user frame into a radio wave type ICS user frame and sending it the radio wave type ICS user frame and a function of receiving a radio wave type ICS user frame and reversely converting it the radio wave type ICS user frame into internal information of an ICS user frame, and communication is carried out between the ICS network frame and an IP

terminal, in which a second radio transceiver having the same functions as said functions, is built-in.

175. (Currently amended) An integrated information communication system comprising a conversion table server and two or more access control devices/apparatuses, at least one of said access control apparatuses being an access control apparatus at a transmitting side, and at least one of said access control apparatuses being an access control apparatus at a receiving side, wherein:

said access control apparatus at the transmitting side is operable to receive a transmission ICS user frame is inputted from an ICS logical terminal at a termination of a user communication line, and convert the transmission ICS user frame becomes to an ICS network frame in an access control device of a transmitting side, and transfer the ICS network frame is transferred through an interior of the said integrated information communication system and so that the ICS network frame reaches an said access control device-apparatus of an incoming at the receiving side; and

said access control apparatus at the receiving side is operable to restore the received ICS network frame is restored as the ICS user frame; in the access control device side, and

an ICS domain name of a receiver is presented from an exterior IP terminal of the said integrated information communication system to a said conversion table server at an interior of the said integrated information communication system, and the said conversion table server forwards is operable to forward an inquiry to a domain name server and acquires acquire an address of a receiver corresponding to the ICS domain name, and the conversion table server rewrites rewrite the conversion table.

176. (Currently amended) An IP telephone machine comprising: at least an IP address storing section; a voice inputting/outputting section; and a voice data transmitting/receiving section, wherein:

the said IP telephone machine generating is operable to generate an ICS user frame including a telephone number of a destination telephone machine and transmitting transmit it the generated ICS user frame to an ICS user communication line; wherein

an ICS user address in the ICS user frame is the ICS user address of the telephone machine included in the said IP address storing section and the ICS user address of an inquiry destination server, and the ICS user frame which stores the ICS user address of the destination telephone machine is received from the ICS user communication line;

said voice inputting/outputting section is operable to input and a voice; is inputted from the voice inputting/outputting section, and

said voice transmitting/receiving section is operable to convert the inputted voice is converted to a digital voice, in the voice transmitting/receiving section and the digital voice is stored in the ICS user frame and is transmitted to the destination telephone machine; and

thereafter, telephone communication is carried out by transmitting and receiving the ICS user frame, and the ICS user address in the ICS user frame including the digital voice is the ICS user address of the telephone machine and the ICS user address of the acquired destination telephone machine.

177. (Currently amended) An IP terminal comprising: at least an ICS domain name and an ICS user address of the said IP terminal; an ICS user address of a registration server; and a code function and a code related data, and further comprising a function which wherein:

said IP terminal is operable to generate generates an ICS user frame and transmits transmit and receives it receive the ICS user frame; wherein

said IP terminal enables a user of the IP terminal connects to connect said the IP terminal to a position of a home IP terminal and generates generate an ICS user frame including at least an ICS domain name and an ICS user address of the said IP terminal and transmits it the ICS domain name and ICS user address to a user communication line; and

an address of the ICS user frame is the ICS user address of ~~the said~~ IP terminal and the ICS user address of the registration server; and

~~said the IP terminal can is operable to receive an ICS user frame including a report of the registration from the user communication line.~~

178. (Cancelled)

179. (Currently amended) An integrated information communication system comprising: at least

an IP telephone machine operable to generate an ICS user frame including a telephone number of a destination telephone machine and transmit the generated the ICS user frame to an ICS user communication line;

an IP address storing section operable to store an ICS user address of said IP telephone machine;

a voice inputting/outputting section operable to input/output a voice; and

a voice data transmitting/receiving section operable to convert a voice inputted by said voice inputting/outputting section to a digital voice, wherein:

~~the IP telephone machine generating an ICS user frame including a telephone number of a destination telephone machine and transmitting it to an ICS user communication line, wherein an ICS user address in the ICS user frame generated by said IP telephone machine is the ICS user address of the said IP telephone machine included in the said IP address storing section and the ICS user address of an inquiry destination server in the said integrated information communication system; and~~

~~the ICS user frame which stores the ICS user address of the destination telephone machine is received from the ICS user communication line; and~~

said voice inputting/outputting section is operable to input a voice; is inputted from the voice inputting/outputting section, and

said voice data transmitting/receiving section is operable to convert the voice inputted by said voice inputting/outputting section to is converted to a digital voice in the voice transmitting/receiving section and which is stored in the ICS user frame and is transmitted to the destination telephone machine; and

~~thereafter, telephone communication is carried out by transmitting and receiving the ICS user frame, and communication is carried out by connecting to the said IP telephone machine which is operable to carry carries out communication based on the basis of the fact that the ICS user address in the ICS user frame including the digital voice is the ICS user address of the said telephone machine and the ICS user address of the acquired destination telephone machine.~~

180. (Currently amended) An integrated information communication system comprising two or more access control devieesapparatus, at least one of said access control apparatuses being an access control apparatus at a transmitting side, and at least one of said access control apparatuses being an access control apparatus at a receiving side, wherein:

said access control apparatus at the transmitting side is operable to receive a transmission ICS user frame is inputted from an ICS logical terminal at a termination of a user communication line, and convert the transmission ICS user frame becomes to an ICS network frame in an access control device at a transmitting side, and transfer the ICS network frame is transferred through an interior of the said integrated information communication system and so that the ICS network frame reaches an said access control device apparatus of an incoming at the receiving side; and

said access control apparatus at the receiving side is operable to restore the ICS network frame is restored as the ICS user frame in the access control device of the incoming side; and

the ICS user frame includes a digitized voice.

181-182. (Cancelled)

183. (Currently amended) An IP terminal comprising at least an IP address storing section operable to store an ICS user address of said IP terminal; a voice inputting/outputting section operable to input a voice; and

a voice data transmitting/receiving section operable to convert the voice inputted by said voice inputting/outputting section to a digital voice, and wherein:

said IP terminal is operable to generate generating an ICS user frame including a telephone number of a destination IP terminal and transmitting transmit the ICS user frame it to an ICS user communication line, wherein

an ICS user address in the ICS user frame is the ICS user address of said IP terminal included in the said IP address storing section and the ICS user address of an inquiry destination server, and

the ICS user frame which stores the ICS user address of the destination IP terminal is received from the ICS user communication line, and

said voice inputting/outputting section is operable to input a voice is inputted from the voice inputting/outputting section, and

said voice data transmitting/receiving section is operable to convert the voice is converted inputted by said voice inputting/outputting section to a digital voice in the voice transmitting/receiving section and which is stored in the ICS user frame and is transmitted to the destination IP terminal, and thereafter,

a telephone communication is carried out by transmitting and receiving the ICS user frame, and the ICS user address in the ICS user frame including the digital voice is the ICS user address of said IP terminal and the ICS user address of the acquired destination IP terminal.

184. (Currently amended) A communication method for an IP terminal comprising at least an IP address storing section, a voice inputting/outputting section, and a voice data transmitting/receiving section, said method comprising: and

generating an ICS user frame including a telephone number of a destination IP terminal, and

transmitting it the generated ICS user frame to an ICS user communication line, wherein an ICS user address in the ICS user frame is the ICS user address of said the IP terminal included in the IP address storing section and the ICS user address of an inquiry destination server, and

receiving the ICS user frame which stores the ICS user address of the destination IP terminal ~~is received~~ from the ICS user communication line; and

inputting a voice ~~is inputted~~ from the voice inputting/outputting section; and
converting the inputted voice ~~is converted~~ to a digital voice in the voice transmitting/receiving section; and

storing the digital voice ~~is stored~~ in the ICS user frame and ~~is transmitted~~ the digital voice to the destination IP terminal; and thereafter;

carrying out a telephone communication ~~is carried out~~ by transmitting and receiving the ICS user frame, and

wherein the ICS user address in the ICS user frame including the digital voice is the ICS user address of ~~said~~ the IP terminal and the ICS user address of the acquired destination IP terminal.

185. (Currently amended) An integrated information communication system (ICS) including:

voice data transmitting/receiving means;

two or more access control devices~~apparatus~~, at least one of said access control apparatuses being an access control apparatus at a transmitting side, and at least one of said access control apparatuses being an access control apparatus at a receiving side; and

a telephone machine at the receiving side, wherein;

said access control apparatus at the transmitting side is operable to receive a transmission ICS user frame ~~is inputted~~ from an ICS logic terminal connected to a user communication line, ~~and convert~~ the transmission ICS user frame ~~is converted~~ into an ICS network frame ~~in an access control device on the transmitting side, and transfer~~ the ICS network frame ~~is transferred~~ through the said integrated information communication system ~~and so that the ICS network frame reaches an~~ said access control device ~~apparatus~~ ~~on~~ at the receiving side; and

said access control apparatus at the receiving side is operable to restore the ICS user frame ~~is restored~~ from the ICS network frame ~~in the access control device on the receiving side, and~~

when a telephone communication is carried out, a said telephone machine on the receiving side ~~receives~~ is operable to receive an ICS user frame transmitted via an ICS user communication line from an originating user;

wherein said voice data transmitting/receiving means converts inputted voice signals are converted by voice data transmitting/receiving means into a format which can be transmitted across the ICS network, and transmits the converted voice signals to are transmitted to the said telephone machine on the receiving side; and thereafter, and

telephone communication is carried out by transmitting and receiving ICS user frames between the originating user and the destination user.

186. (Currently amended) A communication method, wherein two telephone machines communicate with each other across the said integrated information communication system (ICS) claimed in accordance to claim 185.

187-193. (Cancelled)

194. (Currently amended) A communication method performed between terminals, wherein an ICS user frame including an IP address storage portion, a voice input/output portion, a voice data sending/receiving portion and a telephone number of a destination terminal is formed, said the ICS user frame is sent to a user communication line, an ICS user address in said the ICS user frame is an ICS user address of said the terminal including included in said the IP address storage portion and an ICS user address of an inquiring server in an integrated information communication system, said method comprising the steps of:

receiving an ICS user frame ~~stored~~ storing an ICS user address of said the destination terminal from said the ICS user communication line;

inputting a voice from said the voice input/output portion;

converting from the inputted voice to a digital voice in said the voice data sending/receiving portion;

sending the digital voice to said the destination terminal by storing it the digital voice in said the ICS user frame; and

carrying out a telephone communication by sending/receiving the ICS user frame;

and

whereby wherein an ICS user address in said-the ICS user frame including the digital voice includes a function to communicate by connecting to a terminal to be communicated, based on an ICS user address of the terminal and an ICS user address of said-the destination terminal.

195. (Currently amended) A telephone machine, wherein operable to:

form an ICS user frame including an IP address storage portion, a voice input/output portion, a voice data sending/receiving portion and a telephone number of a destination telephone machine; is formed;

said-send the ICS user frame is sent to a user communication line, an ICS user address in said-the ICS user frame is-being an ICS user address of said-said telephone machine including-included in said IP address storage portion and an ICS user address of an inquiring server in an integrated information communication system; and

said telephone machine receives-receive an ICS user frame stored-storing an ICS user address of said-the destination telephone machine from said-the ICS user communication line;

inputs-input a voice from said voice input/output portion;

converts-from-convert the voice inputted from said voice input/output portion to a digital voice in said voice data sending/receiving portion;

sends-send the digital voice to said-the destination telephone machine by storing it the digital voice in said-the ICS user frame; and

carries-carry out a telephone communication by sending/receiving the ICS user frame; and

whereby wherein an ICS user address in said-the ICS user frame including the digital voice includes a function to communicate by connecting to a telephone machine to be communicated, based on an ICS user address of the-said telephone machine and an ICS user address of said-the destination telephone machine.

196. (Currently amended) A terminal, wherein operable to:

form an ICS user frame including an IP address storage portion, a voice input/output portion, a voice data sending/receiving portion and a telephone number of a destination terminal; is formed;

send said the ICS user frame is sent to a user communication line, an ICS user address in said the ICS user frame is being an ICS user address of said terminal including included in said IP address storage portion and an ICS user address of an inquiring server in an integrated information communication system; and

said terminal receives receive an ICS user frame stored storing an ICS user address of said the destination terminal from said the ICS user communication line;

inputs input a voice from said voice input/output portion;

converts convert the voice inputted from said voice input/output portion from the voice to a digital voice in said voice data sending/receiving portion;

sends send the digital voice to said the destination terminal by storing it the digital voice in said the ICS user frame; and

carries carry out a telephone communication by sending/receiving the ICS user frame; and

whereby wherein an ICS user address in said the ICS user frame including the digital voice includes a function to communicate by connecting to a terminal to be communicated, based on an ICS user address of the said terminal and an ICS user address of said the destination terminal.

197-200. (Cancelled)

201. (Currently amended) An IP communication network, wherein an inner packet is formed based on a logic terminal of a transmitting sending side and an outer packet, and a logic terminal of a receiving side is decided based on a logic terminal discriminating information of said the formed inner packet.

202. (Currently amended) An IP communication network, wherein there is provided comprising two or more access control apparatusapparatuses, said access control apparatusapparatuses including includes two or more logic terminals, at least one of said

access control apparatuses being an access control apparatus at a transmitting side, and at least one of said access control apparatuses being an access control apparatus at a receiving side, wherein:

an said access control apparatus of sending at the transmitting side forms is operable to form an inner packet based on a logic terminal of the transmitting sending side and an outer packet, and transmit the inner packet; and

an said access control apparatus of at the receiving side decides is operable receive the inner packet, and decide a logic terminal of the receiving side based on a logic terminal discriminating information of said the received inner packet.

203. (Currently amended) An IP communication network, wherein there is provided comprising two or more access control apparatusapparatuses, said access control apparatus-apparatuses including includes two or more logic terminals, at least one of said access control apparatuses being an access control apparatus at a transmitting side, and at least one of said access control apparatuses being an access control apparatus at a receiving side, wherein:

an said access control apparatus of sending at the transmitting side forms is operable to form an inner packet based on an outer packet, and transmit the inner packet; and

said an access control apparatus of at the receiving side restores is operable to restore the said outer packet; and,

a communication between said access control apparatus-apparatuses is carried out by using said the inner packet, and said the inner packet includes a logic terminal discriminating information of the receiving side.

204. (Currently amended) An IP communication network, wherein comprises a plurality of access control apparatus-apparatuses including includes two or more communication lines, at least one of said access control apparatuses being an access control apparatus at a transmitting side, and at least one of said access control apparatuses being an access control apparatus at a receiving side, wherein:

logic terminals are decided for each communication line;

an-said access control apparatus of sending at the transmitting side forms-is operable to form an inner packet from an outer packet for each logic terminal;

an-said access control apparatus of at the receiving side is operable to restore restores said the outer packet from said the inner packet for each logic terminal of the receiving side; and

a communication between said access control apparatus-apparatuses is carried out by using said-the inner packet.

205-220. (Cancelled)

221. (Original) An IP communication network according to Claim 201, wherein an IP packet is ciphered.

222. (Cancelled)

223. (Original) An IP communication network according to Claim 201, wherein an IP packet is electronically certified.

224. (Cancelled)

225. (Currently amended) An IP communication network, wherein there is provided comprising two or more access control apparatusapparatuses, wherein:

two or more communication lines are connected to said access control apparatusapparatuses;

a logic terminal is decided for each communication line; and

a destination address of an IP packet is set in at least one of said access control apparatus-apparatuses for each logic terminal.

226. (Cancelled)

227. (Currently amended) An IP communication network, wherein there is provided comprising two or more access control apparatuses, at least one of said access control apparatuses being an access control apparatus at a transmitting side, and at least one of said access control apparatuses being an access control apparatus at a receiving side, wherein:

said access control apparatus at the transmitting side is operable to hold when a sending address which includes a sending address of an outer packet, is included in a sending address held in an access control apparatus of sending side,

an said access control apparatus of sending at the transmitting side forms is operable to form an inner packet based on said the outer packet,

said access control apparatus at the receiving side is operable to restore the inner packet, is restored at an access control apparatus of receiving side, and

a communication between said access control apparatus-apparatuses is carried out by using said the inner packet.

228. (Currently amended) An IP communication network, wherein there is provided comprising two or more access control apparatuses, at least one of said access control apparatuses being an access control apparatus at a transmitting side, and at least one of said access control apparatuses being an access control apparatus at a receiving side,

wherein when a destination address of an outer packet is included in a destination address held in an said access control apparatus of sending at the transmitting side,

an said access control apparatus of sending at the transmitting side forms is operable to form an inner packet based on said the outer packet,

said access control apparatus at the receiving side is operable to restore the inner packet, is restored at an access control apparatus of receiving side, and

a communication between said access control apparatus-apparatuses is carried by using said the inner packet.

229. (Currently amended) An IP communication network, wherein there is provided comprising two or more access control apparatuses, at least one of said access

control apparatuses being an access control apparatus at a transmitting side, and at least one of said access control apparatuses being an access control apparatus at a receiving side, wherein:

said access control apparatus at the transmitting side is operable to form an inner packet is formed at an access control apparatus of sending side-based on an outer packet;
;

a communication between said access control apparatus-apparatuses is carried out by using said-the inner packet; and

said access control apparatus at the transmitting side is operable to form forms said-the outer packet based on said-the inner packet when a sending address of an outer packet included in a received inner packet is included as a sending address of an outer packet held in an-said access control apparatus of-at the receiving side.

230. (Currently amended) An IP communication network, wherein there is provided comprising two or more access control apparatus-apparatuses, at least one of said access control apparatuses being an access control apparatus at a transmitting side, and at least one of said access control apparatuses being an access control apparatus at a receiving side, wherein:

said access control apparatus at the transmitting side is operable to form an inner packet is formed at an access control apparatus of sending side-based on an outer packet;
a communication between said access control apparatus-apparatuses is carried out by using said-the inner packet; and

said access control apparatus at the transmitting side is operable to form forms said-the outer packet based on said-the inner packet when a destination address of an outer packet included in a received inner packet is included as a destination address of an outer packet held in an-said access control apparatus of-at the receiving side.

231-243. (Cancelled)

244. (Currently amended) An IP communication network, wherein said IP communication network includes comprising two or more access control

apparatusapparatuses, at least one of said access control apparatuses being an access control apparatus at a transmitting side, and at least one of said access control apparatuses being an access control apparatus at a receiving side, wherein:

said an-access control apparatus of sending at the transmitting side forms is operable to form an ICS network frame from an ICS user frame;

an-said access control apparatus of at the receiving side restores is operable to restore the said ICS user frame from said the ICS network frame;

said access control apparatus at the transmitting side is operable to send the ICS network frame is sent from said access control apparatus of sending side to said access control apparatus of at the receiving side; and

a record of a conversion table in said access control apparatus of sending at the transmitting side includes at least a receiver ICS user address, a sending ICS network address, and a receiving ICS network address.

245-291. (Cancelled)

292. (Currently amended) An IP communication network, wherein there are provided comprising:

an accounting server operable to carry out an account-administration for a communication; and

two or more access control apparatusapparatuses, said access control apparatus apparatuses including include two or more logical terminals, at least one of said access control apparatuses being an access control apparatus at a transmitting side, and at least one of said access control apparatuses being an access control apparatus at a receiving side, wherein:

a-said access control apparatus at the transmitting sending side access control apparatus forms is operable to form an internal packet including a receiving side logical terminal discriminating information based on a sending transmitting side logical terminal and an external packet, and transmits ittransmit the internal packet; and,

a-receiving side said access control apparatus at the receiving side is operable to receive receives the internal packet and determines determine the receiving side logical

terminal based on the logical terminal discriminating information in the received internal packet.

293. (Currently amended) An IP communication network, ~~wherein there are provided comprising two or more access control apparatusapparatuses, said access control apparatus include apparatuses including~~ two or more logical terminals, at least one of said access control apparatuses being an access control apparatus at a transmitting side, and at least one of said access control apparatuses being an access control apparatus at a receiving side, wherein:

said access control apparatus at the transmitting a sending side access control apparatus forms is operable to form an internal packet including a receiving side logical terminal discriminating information based on a sending transmitting side logical terminal and an external packet, and transmits it,transmit the internal packet; and,

said access control apparatus at the a-receiving side access control apparatus is operable to receive receives the internal packet, determines determine the receiving side logical terminal based on the logical terminal discriminating information in the received internal packet, and carried carry out an account-administration of a communication.

294. (Currently amended) An IP communication network, ~~wherein there are provided comprising two or more access control apparatusapparatuses, said access control apparatus include apparatuses including~~ two or more logical terminals, at least one of said access control apparatuses being an access control apparatus at a transmitting side, and at least one of said access control apparatuses being an access control apparatus at a receiving side, wherein:

a sending side said access control apparatus at the transmitting side is operable to form an internal packet including a receiving side logical terminal discriminating information based on a sending transmitting side logical terminal and an external packet, and transmits it,transmit the internal packet; and,

a said access control apparatus at the receiving side access control apparatus receives is operable to receive the internal packet, determines determine the receiving

side logical terminal based on the logical terminal discriminating information in the internal packet, and ~~carried~~ carry out an address-administration of an ICS user frame.

295. (Currently amended) An IP communication network, ~~wherein there are provided comprising~~ two or more access control apparatuses, said access control apparatuses including two or more logical terminals, at least one of said access control apparatuses being an access control apparatus at a transmitting side, and at least one of said access control apparatuses being an access control apparatus at a receiving side, wherein:

~~a sending side~~ said access control apparatus forms at the transmitting side is operable to form an internal packet including a receiving side logical terminal discriminating information based on a ~~sending~~ transmitting side logical terminal and an external packet, and ~~transmits it, transmit~~ the internal packet; and

a said access control apparatus at the receiving side access control apparatus receives is operable to receive the internal packet, determines determine the receiving side logical terminal based on the logical terminal discriminating information in the received internal packet and ~~carried~~ carry out an electronic signature.

296. (Currently amended) An IP communication network, ~~wherein there are provided comprising~~ two or more access control apparatuses, said access control apparatuses including two or more logical terminals, at least one of said access control apparatuses being an access control apparatus at a transmitting side, and at least one of said access control apparatuses being an access control apparatus at a receiving side, wherein:

~~a sending side~~ said access control apparatus at the transmitting side is operable to form an internal packet including a receiving side logical terminal discriminating information based on a ~~sending~~ transmitting side logical terminal and an external packet, and ~~transmits it~~ transmit the internal packet; and,

a said access control apparatus at the receiving side access control apparatus receives is operable to receive the internal packet, determines determine the receiving side logical terminal based on the logical terminal discriminating information in the

received internal packet and carried-carry out an operating administration including at least the operating administration of said access control apparatus.

297. (Currently amended) An IP communication network, wherein there are provided comprising two or more access control apparatuses, said access control apparatus include apparatuses including two or more logical terminals, at least one of said access control apparatuses being an access control apparatus at a transmitting side, and at least one of said access control apparatuses being an access control apparatus at a receiving side, wherein:

a sending side-said access control apparatus forms at the transmitting side is operable to form an internal packet including a receiving side logical terminal discriminating information based on a sending-transmitting side logical terminal and an external packet, and transmits it transmit the internal packet; and,

a said access control apparatus at the receiving side access control apparatus receives is operable to receive the internal packet, determines determine the receiving side logical terminal based on the logical terminal discriminating information in the received internal packet and carried-carry out an encryption including at least an encryption of the an ICS user frame.

298-301. (Cancelled)

302. (Currently amended) A communication method comprising: the steps of a process for

forming an ICS network frame including a receiving side ICS logical terminal discriminating information based on a sending-transmitting side ICS logical terminal and an ICS user frame; and

a process for determining a receiving side ICS logical terminal for sending said the ICS network frame based on said the receiving side ICS logical terminal discriminating information.

303. (Currently amended) A communication method, ~~wherein for~~ an access control apparatus ~~includes-including~~ two or more ICS logical terminals, and ~~said method~~ comprising the steps of:

~~a process that forming, in a sending transmitting side access control apparatus, forms an ICS network frame including a-receiving side ICS logical terminal discriminating information based on a sending transmitting side ICS logical terminal and an ICS user frame, and transmits ittransmitting the formed ICS network frame; and~~

~~a process that a-receiving, in a receiving side access control apparatus, receives said the transmitted ICS network frame and determines determining an ICS logical terminal of said the receiving side access control apparatus based on an the ICS logical terminal discriminating information in said the ICS network frame.~~

304. (Currently amended) A communication method ~~wherein for~~ an access control apparatus ~~includes-including~~ a conversion table and two or more ICS logical terminals, and ~~said the conversion table has an having~~ information to form an ICS logical terminal discriminating information, and ~~said method comprising:~~

~~which comprises the steps of a process that forming, in a sending transmitting side access control apparatus, forms an ICS network frame including a-receiving side ICS logical terminal discriminating information based on an ICS user frame by using said the conversion table, and transmits ittransmitting the formed ICS network frame; and~~

~~a process that receiving, in a receiving side access control apparatus receives said the transmitted ICS network frame and determines determining the ICS logical terminal of said the receiving side access control apparatus based on the ICS logical terminal discriminating information in said the ICS network frame.~~

305. (Currently amended) A communication method which comprises the steps of comprising:

~~a process for determining an ICS network address of an internal ICS network frame based on a sending transmitting side ICS logical terminal and an ICS user address assigned to an external sending ICS user frame; and~~

~~a process for determining a receiving side ICS logical terminal for sending said the ICS network frame based on said the determined ICS network address.~~

306-333. (Cancelled)

334. (Currently amended) A communication method comprising: ~~the steps of a process for~~

forming an ICS user frame including a second destination ICS user address based on an ICS user frame including a first destination ICS user address;¹⁵

~~a process for forming an ICS network frame including a receiving side ICS logical terminal discriminating information based on a sending transmitting side ICS logical terminal and said the formed ICS user frame; and~~

~~a process for determining a receiving side ICS logical terminal for sending said transmitting the ICS network frame based on said the receiving side ICS logical terminal discriminating information.~~

335. (Currently amended) A communication method, ~~wherein for~~ an access control apparatus ~~includes including~~ two or more ICS logical terminals, and which comprises the steps of ~~said method comprising:~~

~~a process that forming, in a sending transmitting side access control apparatus, forms an ICS user frame including a second destination ICS user address based on an ICS user frame including a first destination ICS user address, and forms forming an ICS network frame including a receiving side ICS logical terminal discriminating information based on said the formed ICS user frame and a sending transmitting side ICS logical terminal, and transmits it transmitting the formed ICS network frame; and~~

~~a process that receiving, in a receiving side access control apparatus, receives said the transmitted ICS network frame and determines determining the ICS logical terminal of said the receiving side access control apparatus based on the ICS logical terminal discriminating information in said the ICS network address.~~

336. (Currently amended) A communication method, ~~wherein for~~ an access control apparatus ~~includes including~~ a conversion table and two or more ICS logical terminals, ~~and said the~~ conversion table ~~has an~~ ~~having~~ information for forming an ICS logical terminal discriminating information, ~~and which comprises the steps of~~ ~~said method comprising:~~

~~a process that forming, in a sending transmitting side access control apparatus, forms an ICS user frame including a second destination ICS user address based on the ICS user frame including a first destination ICS user address, and forms forming an ICS network frame including a receiving side ICS logical terminal discriminating information based on said the formed ICS user frame by using said the conversion table, and transmits it, transmitting the formed ICS network frame; and~~

~~a process that receiving, in a receiving side access control apparatus, receives said the transmitted ICS network frame and determines determining the ICS logical terminal of said the receiving side access control apparatus based on the ICS logical terminal discriminating information in said the ICS network address.~~

337. (Currently amended) A communication method, ~~which comprises the steps of comprising:~~

~~a process for forming an ICS user frame including a second destination ICS user address based on an ICS user frame including a first destination ICS user address;~~

~~a process for determining an ICS network address of an internal ICS network frame based on a sending transmitting side ICS logical terminal and the ICS user address given to said the formed ICS user frame; and~~

~~a process for determining a receiving side ICS logical terminal for sending said transmitting the ICS network frame based on said the determined ICS network address.~~

338-404. (Cancelled)

405. (New) An IP terminal operable to communicate with a destination terminal through an IP communication network, said IP terminal comprising:

~~a telephone number inputting section operable to generate an IP frame based on~~

an inputted telephone number and send the inputted telephone number to the IP communication network;

an IP address storing section operable to store an IP address received from the IP communication network for communicating with the destination terminal; and

a voice inputting section, wherein a voice inputted from said voice inputting section is stored in an IP frame being assigned the IP address stored in said IP address storing section.

406. (New) An IP terminal operable to communicate with a destination terminal through an IP communication network, said IP terminal comprising:

a telephone number inputting section,

a voice inputting section;

an IP address storing section; and

a wireless sending/receiving section, wherein:

said wireless sending/receiving section is operable to convert an IP frame into wireless type information and send the wireless type information, to convert the wireless type information into the IP frame, and to send/receive the wireless type information and communicate with the destination terminal;

said telephone number inputting section is operable to generate the IP frame based on an inputted telephone number;

said wireless sending/receiving section is operable to convert the IP frame into the wireless type information and send the wireless type information to the IP communication network;

said IP address storing section is operable to store an IP address received from the IP communication network for communicating with the destination terminal; and

a voice inputted from said voice inputting section is stored in an IP frame being assigned the IP address stored in said IP address storing section.

407. (New) An IP terminal connected to an IP communication line, said IP terminal comprising:

a telephone number inputting section;

an IP address storing section; and

a voice data sending/receiving section, wherein:

said IP address storing section is operable to hold an own IP address and a server accessing IP address;

said telephone number inputting section includes a telephone number of a destination terminal;

said IP terminal is operable to form an IP frame such that the server accessing IP address is a destination, send the formed IP frame to the IP communication line, and register at said IP address storing section a destination IP address which corresponds to a telephone number of the destination terminal included in an IP address received from the IP communication line; and

said IP terminal is operable to form an IP frame storing the destination IP address, the own IP address and a voice inputted from said voice data sending/receiving section, send the formed IP frame to the IP communication line, take out the voice from the IP frame received from the IP communication line, and send the voice to said voice data sending/receiving section.

408. (New) An IP terminal connected to a wireless communication line, said IP terminal comprising:

a telephone number inputting section;

an IP address storing section;

a voice data sending/receiving section; and

a wireless sending/receiving section, wherein:

said wireless sending/receiving section is operable to convert an IP frame into wireless type information and send the wireless type information, and convert the wireless type information into an IP frame and receive the IP frame;

said IP address storing section is operable to hold an own IP address and a server accessing IP address;

said telephone number inputting section includes a telephone number of a destination terminal;

said IP terminal is operable to form an IP frame such that the server accessing IP

address is a destination, send the formed IP frame to the wireless communication line, and register at said IP address storing section a destination IP address which corresponds to a telephone number of the destination terminal included in an IP address received from the wireless communication line; and

 said IP terminal is operable to form an IP frame storing the destination IP address, the own IP address and a voice inputted from said voice data sending/receiving section, send the formed IP frame to the wireless communication line, take out the voice from the IP frame received from the wireless communication line, and send the voice to said voice data sending/receiving section.

409. (New) An access control apparatus comprising two or more first logical terminals to input and output an ICS user frame, and one or more second logical terminals to input and output an ICS network frame,

 wherein said access control apparatus is operable to form the ICS network frame based on a destination address of the ICS user frame inputted from one of said first logical terminals and logical terminal determination information assigned to said one of said first logical terminals, and output the ICS network frame from at least one of said second logical terminals.

410. (New) An access control apparatus comprising:

 a conversion table including plural records;
 two or more first logical terminals A; and
 one or more second logical terminals B, wherein:
 said first logical terminals A are determined by using logical terminal determination information;

 the records included in said conversion table include the logical terminal determination information, a sender ICS user address, a receiver ICS user address and a receiving ICS network address;

 a first communication line to send/receive an ICS user frame is connected to said first logical terminals A, and a second communication line to send/receive an ICS network frame is connected to said second logical terminals B;

the ICS user frame comprises a first control field and a first data field, the first control field including the sender ICS user address and the receiver ICS user address;

the ICS network frame comprises a second control field and a second data field, the second control field including the receiving ICS network address, and the second data field storing the ICS user frame,

said access control apparatus is operable to input an ICS user frame including a sender ICS user address A1 and a receiver ICS user address A2 from the first communication line via a logical terminal Ax, and form a network frame including the ICS user frame when the logical terminal determination information of the logical terminal Ax, the sender ICS user address A1, the receiving ICS user address A2 and a receiving ICS network address A4 are registered at a m-th record in said conversion table, the second control field of the ICS network frame includes the receiving ICS network address A4, and said access control apparatus is operable to output the formed network frame to the second communication line via said second logical terminals.

411. (New) An access control apparatus according to claim 410, wherein:

the m-th record includes the logical terminal determination information of the logical terminal Ax, the sender ICS user address A1, a receiver ICS user address A2u and a receiving ICS network address A4u; and

an n-th record includes the logical terminal determination information of the logical terminal Ax, the sender ICS user address A1, a receiver ICS user address A2v and a receiving ICS network address A4v;

said access control apparatus is operable to form a first ICS network frame including the receiving ICS network address A4u when a first ICS user frame including the sender ICS user address A1 and the receiver ICS user address A2u is inputted from the first communication line via the logical terminal Ax and sends the formed first ICS network from to the second communication line, and

said access control apparatus is operable to form a second ICS network frame including the receiving ICS network address A4v when a second ICS user frame including the sender ICS user address A1 and the receiver ICS user address A2v is inputted from the first communication line via the logical terminal Ax and sends the

formed second ICS user frame to the second communication line, to thereby change a receiving address of the ICS network frame by changing the receiver ICS user address.

412. (New) An access control apparatus comprising:

- a conversion table including plural records;
- two or more first logical terminals A; and
- one or more second logical terminals B, wherein:;
- said logical terminals A are determined by using logical terminal determination information;
- the records included in said conversion table include the logical terminal determination information, a sender ICS user address, a receiver ICS user address and a receiving ICS network address;
- a first communication line to send/receive an ICS user frame is connected to said first logical terminals A, and a second communication line to send/receive an ICS network frame is connected to said second logical terminals B,
- the ICS user frame comprises a first control field and a first data field, the first control field including the sender ICS user address and the receiver ICS user address;
- the ICS network frame comprises a second control field and a second data field, the second control field including the receiving ICS network address, and the second data field storing the ICS user frame,
- an m-th record of said conversion table includes logical terminal determination information of one of said first logical terminals Ax, a sender ICS user address A1, a receiver ICS user address A2 and a receiving ICS network address A4, and defines a transmitting ICS network address A3 which is defined by a definition of the logical terminal determination information of said logical terminal Ax,
- said access control apparatus is operable to input the ICS network frame from the first communication line via at least one of said second logical terminals B, a control field of the ICS network frame includes a receiving ICS network address B4, the ICS user frame included in the ICS network frame includes a sender ICS user address B1 and a receiver ICS user address B2;
- said access control apparatus is operable to send a restored ICS user frame to the

second communication line via a logical terminal Ax specified by a first logical terminal determination information Ax when the sender ICS user address A1 coincides with the receiver ICS user address B2, the receiver ICS user address A2 coincides with the sender ICS user address B1 and the transmitting ICS network address A3 specified by the logical terminal determination information Ax coincides with the receiving ICS network address B4.

413. (New) An access control apparatus according to claim 412, wherein:

the m-th record includes the logical terminal determination information of said logical terminal Ax, a sender ICS user address A1x, the receiver ICS user address A2 and the receiving ICS network address A4;

an n-th record includes logical terminal determination information Ay, a sender ICS user address A1y, the receiver ICS user address A2 and the receiving ICS network address A4, the transmitting ICS network addresses A3x and A3y being assigned to the logical terminal determination information Ax and Ay, respectively;

said access control apparatus is operable to input the first ICS network frame from the second communication line via said second logical terminal B, a control field of the first ICS network frame includes a receiving ICS network address B4x, and the first ICS user frame included in the first ICS network frame includes the sender ICS user address B1 and a receiver ICS user address B2x;

said access control apparatus is operable to restore the first ICS user frame from the first ICS network frame and send the restored first ICS user frame to the first communication line via a logical terminal specified by the first logical terminal determination information Ax when the sender ICS user address A1x coincides with the receiver ICS user address B2x, the receiver ICS user address A2 coincides with the sender ICS user address B1 and the transmitting ICS network address A3x coincides with the receiving ICS network address B4x;

said access control apparatus is operable to input a second ICS network frame from the second communication line via said second logical terminal B, a control field of the second ICS network frame includes a receiving ICS network address B4y, and a second ICS user frame included in the first ICS network frame includes the sender ICS

user address B1 and a receiver ICS user address B2y,

said access control apparatus is operable to restore the second ICS user frame from the second ICS network frame and send the restored second ICS user frame to the first communication line via a logical terminal specified by a second logical terminal determination information Ay when the sender ICS user address A1y coincides with the receiver ICS user address B2y, the receiver ICS user address A2 coincides with the sender ICS user address B1 and the transmitting ICS network address A3y coincides with the receiving ICS network address B4y, to thereby change a communication line of a destination of the restored ICS user frame by changing the receiving ICS user address of the ICS user frame in the ICS network frame.

414. (New) An access control apparatus comprising two or more first logical terminals operable to input and output an ICS user frame, and one or more second logical terminals operable to input and output an ICS network frame,

wherein the ICS network frame includes logical terminal determination information and the ICS user frame, and said access control apparatus is operable to decide the first logical terminal, and output the ICS user frame via the decided first logical terminal.

415. (New) An access control apparatus comprising two or more first logical terminals operable to input and output an ICS user frame, and one or more second logical terminals operable to input and output an ICS network frame,

wherein said access control apparatus is operable to form the ICS network frame based on a destination address of the ICS user frame inputted from at least one of said first logical terminals and logical terminal determination information assigned to said at least one of said first logical terminals, and to output the ICS network frame from at least one of said second logical terminals.

416. (New) An access control apparatus comprising two or more first logical terminals operable to input and output an ICS user frame, and one or more second logical terminals operable to input and output an ICS network frame,

wherein the ICS network frame includes logical terminal determination information and the ICS user frame, and said access control apparatus is operable to decide at least one of said first logical terminals and output the ICS user frame via the decided first logical terminal.

417. (New) An access control apparatus comprising a conversion table including plural records, two or more first logical terminals A, and one or more second logical terminals B, wherein:

 said first logical terminals A are determined by using logical terminal determination information;

 the records include the logical terminal determination, a sender ICS user address, a receiver ICS user address and a receiving ICS network address;

 a first communication line to send/receive an ICS user frame is connected to said first logical terminals A, and a second communication line to send/receive an ICS network frame is connected to said second logical terminals B;

 the ICS user frame comprises a control field and a data field, said control field includes said sender ICS user address and said receiver ICS user address,

 the ICS network frame comprises a control field and a data field, the control field including the receiving ICS network address, and the data field storing the ICS user frame; and

 wherein said access control apparatus is operable to input an ICS user frame including a receiver ICS user address A2 from the first communication line via a logical terminal Ax, and form a network frame including the ICS user frame when the logical terminal determination information of said logical terminal Ax, a sender ICS user address A1, a receiving ICS user address A2 and a receiving ICS network address A4 are registered at a m-th record in said conversion table, the control field of the network frame including the receiving ICS network address A4, and said access control apparatus being operable to output the formed network frame to the second communication line via said second logical terminals B.

418. (New) An access control apparatus according to claim 417, wherein:

the m-th record includes the logical terminal determination information of said logical terminal Ax, the sender ICS user address A1, a receiver ICS user address A2u and a receiving ICS network address A4u;

an n-th record includes the logical terminal determination information of said logical terminal Ax, the sender ICS user address A1, a receiver ICS user address A2v and a receiving ICS network address A4v,

wherein said access control apparatus is operable to form a first ICS network frame including the receiving ICS network address A4u when a first ICS user frame including the receiver ICS user address A2u is inputted from the first communication line via said logical terminal Ax and send the formed first ICS user frame to the second communication line; and

said access control apparatus is operable to form a second ICS network frame including the receiving ICS network address A4v when a second ICS user frame including the receiver ICS user address A2v is inputted from the first communication line via said logical terminal Ax and send the formed second ICS network frame to the second communication line, to thereby change a receiving address of the ICS network frame by changing the receiver ICS user address.

419. (New) An access control apparatus comprising a conversion table including plural records, two or more first logical terminals A, and one or more second logical terminals B, wherein:

said first logical terminals A are determined by using logical terminal determination information;

the records include the logical terminal determination information, a sender ICS user address, a receiver ICS user address and a receiving ICS network address,

a first communication line to send/receive an ICS user frame is connected to said first logical terminals A, and a second communication line to send/receive an ICS network frame is connected to said second logical terminals B;

said ICS user frame comprises a control field and a data field, said control field includes said sender ICS user address and said receiver ICS user address;

the ICS network frame comprises a control field and a data field, the control field

including the receiving ICS network address, and the data field storing the ICS user frame;

an m-th record of said conversion table includes the logical terminal determination information of one of said first logical terminals Ax, a sender ICS user address A1 and a receiving ICS network address A4, and defines a transmitting ICS network address A3 which is defined by a definition of the logical terminal determination of said logical terminal Ax;

said access control apparatus is operable to input the ICS network frame from the first communication line via said second logical terminal B, a control field of the ICS network frame includes a receiving ICS network address B4, the ICS user frame included in the ICS network frame includes a sender ICS user address B1 and a receiver ICS user address B2; and

said access control apparatus is operable to send a restored ICS user frame to the second communication line via a logical terminal Ax specified by a first logical terminal determination information Ax when the sender ICS user address A1 coincides with the receiver ICS user address B1 and the transmitting ICS network address A3 specified by the logical terminal determination information Ax coincides with the receiving ICS network address B4.

420. (New) An access control apparatus according to claim 419, wherein:

the m-th record includes the logical terminal determination information Ax, a sender ICS user address A1x, the receiver ICS user address A2 and the receiving ICS network address A4;

an n-th record includes logical terminal determination information Ay, a sender ICS user address A1y, the receiver ICS user address A2 and the receiving ICS network address A4, and a transmitting ICS network addresses A3x and A3y are assigned to the logical terminal determination information Ax and Ay, respectively;

said access control apparatus is operable to input the first ICS network frame from the second communication line via said second logical terminal B, a control field of the first ICS network frame includes a receiving ICS network address B4x, and the first ICS user frame included in the first ICS network frame includes the sender ICS user

address B1 and a receiver ICS user address B2x;

 said access control apparatus is operable to restore the first ICS user frame from the first ICS network frame and sends the restored first ICS user frame to the first communication line via a logical terminal specified by the first logical terminal determination information Ax when the sender ICS user address A1x coincides with the receiver ICS user address B2x and the transmitting ICS network address A3x coincides with the receiving ICS network address B4x;

 said access control apparatus is operable to input a second ICS network frame from the second communication line via said second logical terminal B, a control field of the second ICS network frame includes a receiving ICS network address B4y, and a second ICS user frame included in the first ICS network frame includes the sender ICS user address B1 and a receiver ICS user address B2y;

 said access control apparatus is operable to restore the second ICS user frame from the second ICS network frame and sends the restored second ICS user frame to the first communication line via a logical terminal specified by a second logical terminal determination information Ay when the sender ICS user address A1y coincides with the receiver ICS user address B2y and the transmitting ICS network address A3y coincides with the receiving ICS network address B4y, to thereby change a communication line of a destination of the restored ICS user frame by changing the receiving ICS user address of the ICS user frame in the ICS network frame.

421. (New) An IP communication method performed by terminals connected to an IP network for communicating with a destination terminal through the IP communication network, the terminals each comprising a telephone number inputting section, a voice inputting/outputting section and an IP address storing section, said method comprising:

 generating an IP frame based on an telephone number inputted from the telephone number inputting section;

 sending the inputted telephone number to the IP communication network;

 obtaining an IP address from the inputted telephone number by using a server in the IP communications network, and sending the obtained IP address to the terminal;

 storing an IP address received from the IP communication network for

communicating with the destination terminal at the IP address storing section; and
storing a voice inputted from the voice inputting/outputting section in an IP
frame being assigned the IP address.

422. (New) An IP communication method performed by terminals connected to an IP communication network for communicating with a destination terminal through the IP communication network, the terminals each comprising a telephone number inputting section, a voice inputting/outputting section, an IP address storing section and a wireless sending/receiving section, said method comprising:

converting an IP frame into wireless type information at the wireless sending/receiving section;

sending the wireless type information from the wireless sending/receiving section to the IP communication network;

converting the wireless type information into an IP frame;

transmitting and receiving the wireless type information;

communicating with the destination terminal;

generating the IP frame based on an inputted telephone number at the telephone number inputting section;

converting the IP frame into the wireless type information at the wireless sending/receiving section;

sending the wireless type information to the IP communication network;

obtaining an IP address from the inputted telephone number by using a server in the IP communication network, and sending the obtained IP address to the terminal;

storing an IP address received from the IP communication network for communicating with the destination terminal at the IP address storing section; and

storing a voice inputted from the voice inputting/outputting section in an IP frame being assigned the IP address.

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